

**AMENDMENTS TO THE CLAIMS**

Upon entry of this amendment, the following listing of claims will replace all prior versions and listings of claims in the pending application.

**IN THE CLAIMS**

Please cancel claim 1, and add claims 2-25 as follows:

1. (Canceled).
2. (New) A method for performing by proxies discovery of a maximum transmission unit of a path between a client and a server in a more efficient manner, the method comprising the steps of:
  - (a) determining, by a first proxy, a size for a path maximum transmission unit (PMTU) for transmitting network packets between a client and a server;
  - (b) repacketizing, by the first proxy, packets received from the client for transmission to the server into packet sizes in accordance with the size of the PMTU;
  - (c) transmitting, by the first proxy, the repacketized packets to the server;
  - (d) detecting, by a second proxy, a packet received from transmission of repacketized packets from the first proxy is fragmented; and
  - (e) transmitting, by the second proxy to the first proxy in response to the detection, an acknowledgement packet marked with an indicator that fragmentation has occurred.
3. (New) The method of claim 2, wherein step (a) comprises determining, by the first proxy, a value for the PMTU greater than the current value of the PMTU.
4. (New) The method of claim 2, wherein step (a) comprises determining, by the first proxy, a value for the PMTU by increasing a current value of the PMTU by a predetermined

- percentage for each round-trip-time that elapses without receipt of the indication that fragmentation has occurred.
5. (New) The method of claim 2, wherein step (c) comprises transmitting, by the first proxy, the repacketized packets without one of prohibiting fragmentation or setting the defragmentation flag of the packet off.
  6. (New) The method of claim 2, wherein step (e) comprises generating, by the second proxy, the acknowledgement packet to have a bit in a transport control protocol header set to indicate that fragmentation has occurred.
  7. (New) The method of claim 2, wherein step (e) comprises generating, by the second proxy, the acknowledgement packet to have an option field in a transport control protocol header set to indicate that fragmentation has occurred.
  8. (New) The method of claim 2, wherein step (e) comprises generating, by the second proxy, the acknowledgement packet to have a field in an internet protocol header set to indicate that fragmentation has occurred.
  9. (New) The method of claim 2, comprising stopping, by the first proxy, PMTU discovery in response to receipt of the acknowledgement packet.
  10. (New) The method of claim 2, comprising reducing, by the first proxy, the size of the PMTU in response to receipt of the acknowledgement packet.
  11. (New) The method of claim 10, comprising transmitting, by the first proxy, repacketized client packets formed in accordance with the size of the decreased PMTU.
  12. (New) The method of claim 10, comprising reducing the size of the PMTU by one-half.
  13. (New) The method of claim 1, wherein step (a) comprising triggering the determination

of the PMTU by the first proxy in response to one of receipt of the indicator that fragmentation has occurred or an elapse of time.

14. (New) A system for performing by proxies discovery of a maximum transmission unit of a path between a client and a server in a more efficient manner, the system comprising:

a first proxy determining a size for a path maximum transmission unit (PMTU) for transmitting network packets between a client and a server, repacketizing packets received from the client for transmission to the server into packet sizes in accordance with the size of the PMTU, and transmitting the repacketized packets to the server; and

a second proxy detecting a packet received from transmission of repacketized packets from the first proxy is fragmented, and transmitting to the first proxy in response to the detection of an acknowledgement packet marked with an indicator that fragmentation has occurred.

15. (New) The system of claim 14, wherein the first proxy establishes a value for the PMTU greater than the current value of the PMTU.
16. (New) The system of claim 14, wherein by the first proxy determines a value for the PMTU by increasing a current value of the PMTU by a predetermined percentage for each round-trip-time that elapses without receipt of the indication that fragmentation has occurred.
17. (New) The system of claim 14, wherein the first proxy transmits the repacketized packets without one of prohibiting fragmentation or setting the defragmentation flag of the packet off.

18. (New) The system of claim 14, the second proxy generates the acknowledgement packet to have a bit in a transport control protocol header set to indicate that fragmentation has occurred.
19. (New) The system of claim 14, the second proxy generates the acknowledgement packet to have an option field in a transport control protocol header set to indicate that fragmentation has occurred.
20. (New) The system of claim 14, the second proxy generates the acknowledgement packet to have a field in an internet protocol header set to indicate that fragmentation has occurred.
21. (New) The system of claim 14, wherein the first proxy stops PMTU discovery in response to receipt of the acknowledgement packet.
22. (New) The system of claim 14, wherein the first proxy the first proxy reduces the size of the PMTU in response to receipt of the acknowledgement packet.
23. (New) The system of claim 14, wherein the first proxy transmits repacketized client packets formed in accordance with the size of the decreased PMTU.
24. (New) The system of claim 14, wherein the reduced comprises one-half of the size of the PMTU.
25. (New) The system of claim 14, wherein the first proxy is triggered to perform PMTU discovery in response to one of receipt of the indicator that fragmentation has occurred or an elapse of time.